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10/722,956	11/24/2003	Georg Weber	588.1004	1215

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DAVIDSON, DAVIDSON & KAPPEL, LLC  
485 SEVENTH AVENUE, 14TH FLOOR  
NEW YORK, NY 10018

EXAMINER

SAYOC, EMMANUEL

ART UNIT PAPER NUMBER

3746

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

JP

<b>Office Action Summary</b>	<b>Application No.</b> 10/722,956	<b>Applicant(s)</b> WEBER ET AL.	
	<b>Examiner</b> Emmanuel Sayoc	<b>Art Unit</b> 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action is in response to the amendments of 6/13/2005. In making the below rejections and/or objections the examiner has considered and addressed each of the applicants arguments. Claims 1-31 are pending, and are under current consideration. Claims 1 and 23 are amended.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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3. Claims 1, 2, 9, 13, 15-17, 19, 22, and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn et al. (U.S. 6,250,204 B1), and in view of Atsugi et al. (U.S. 3,557,664).

Kuhn et al., in Figure 1, teach a motor vehicle air conditioner compressor with an intake (39') and a discharge chamber (39) for a suction pressure zone and a discharge pressure zone. The compressor comprises a pot-shaped housing (3), a valve plate (37) having intake and discharge valves and which seals the housing (3), a drive shaft (15) including bearings (19), a drive mechanism (21, 25) for reciprocating pistons (27) and converting the rotational movement of the drive shaft (15) into a reciprocating movement of the pistons (27), a cylinder block (35) for aspirating and compressing a fluid through the reciprocating movement of the pistons (27), a valve device (133), and a cylinder head (7). The cylinder head at least partially forms the intake (39') and discharge chambers (39), and the cylinder head (7) is a separate element from the housing (3). The housing (3) is of pot-shaped form (in that a pot has outer walls forming an inner chamber). All of the intake and discharge chambers (39, 39') are located on a same side of the cylinder block (35).

The Kuhn et al., device differs from the claimed invention in that there is no explicit teaching of the intake and discharge chambers enclosed within a space defined by the housing and a housing sealing cover.

Atsugi teaches an analogous refrigerant compressor with a housing (11, 19, 21), a cylinder block (11), and a cylinder head (20). The compressor includes a lubrication

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system (21, 30, 31, 32, 35, 38) attached to the cylinder head (20). The lubrication system (21, 30, 31, 32, 35, 38) includes a housing cover (21), an oil reservoir (30), an oil intake (32), an oil outlet (35), and an oil separator (38). This system lubrication system (21, 30, 31, 32, 35, 38) enhances the lubrication of the compressor's mechanical parts such as the shaft, bearings, and seals. Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the Kuhn et al. device by, incorporating the lubrication system, as taught by Atsugi, in order to advantageously enhance the lubrication of the compressor's mechanical parts such as the shaft, bearings, and seals. In this combination it would have been further obvious to adopt the lubrication system mounting by attaching the Atsugi housing (21) onto the Kuhn et al. compressor head (7) in an interlocking fashion as seen in Atsugi Figure 1. In this combination, the Atsugi cover (21) constitutes a housing sealing cover which closes the end of the Kuhn et al. housing (3) where the intake and discharge chambers (39, 39') are enclosed within a space defined by the housing (Kuhn et al. 3) and the housing sealing cover (Atsugi 21).

The examiner takes official notice that it was well known to make compressor housings, and cylinder heads, out of steel, and particularly, aluminum due to the materials lightness, durability, and high thermal conductivity.

The examiner takes official notice that placing protruding tabs with eye holes for bolts or fasteners on compressor housings and covers was well known in the art of compressor mounting at the time the invention was made.

The examiner takes official notice that the use of gaskets was well known in the art to join compressor components, such as a housing cover and valve plate, or a shaft to the housing, in sealing arrangement.

A shaft lead-through to the outside (outside of Kuhn et al. housing 3), the shaft bearings (by 63), and shaft gaskets (as stated above) are situated in an area of the housing sealing cover (Atsugi 21).

Since the compressor device in the combination above is a closed system, the intake and discharge chambers (Kuhn et al. 39, 39'), the valve device (Kuhn et al. 37), and the cylinder block are situated in a closed side of the pot shaped housing (Kuhn et al. 3).

With respect to the processes of forging or extrusion, in MPEP 2173, Product-by-Process Claims, the determination of patentability is based on the product itself (not the process). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior-art, the claim is unpatentable even though the prior-art product was made by a different process.

The Kuhn et al. housing (3) is closed from the outside in an area of the cylinder block (35 cylinder assembly including all cylinders) and the valve device (37). In this area, the housing is free of divisions, and sealing devices to the outside area.

The Kuhn et al. compressor has a drive area (see motor section) and a high-pressure zone (discharge chambers 39), the compressor further comprising a seal (seal between the housing cover (Atsugi 21) and the compressor head (Kuhn et al. 7), as

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stated above) for the drive area. The housing sealing cover (Atsugi 21) and the seal of the drive area are situated toward an environment (right side) on a side of the compressor opposite the high-pressure zone since there is a high-pressure zone (Kuhn et al. 39) on the right side of the compressor.

The housing (Kuhn et al. 3) and housing sealing cover (Atsugi et al. 21) sealing devices are situated on a side of the compressor opposite a greatest heat source, which in the application taught is the internal combustion engine of the vehicle. The housing cover (Atsugi 21) constitutes a flanged joint.

The combined device further comprises a spacer (Kuhn et al. 40) separating the intake pressure zone (Kuhn et al. 39') and the discharge pressure zone (Kuhn et al. 39) within the housing (Kuhn et al. 3) bottom (right side (Kuhn et al. Figure 1), the cylinder block (Kuhn et al. 35) and the valve device (Kuhn et al. 37) being supported against the housing (Kuhn et al. 3) bottom by the wall spacer (Kuhn et al. flange 41). The wall spacers are integrated into the housing bottom as they are assembled together into one rigid assembly.

The bottom further comprises a second spacer (see plural walls) separating the discharge pressure zone (discharge pressure) and the drive area pressure zone (suction chamber) within the housing bottom.

The Kuhn et al., as modified by Atsugi, compressor is capable of being used as a motor vehicle air conditioner compressor, as taught in column 1 lines 5-40. The valve device (Kuhn et al. 37) is a valve plate with a suction and discharge valve.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuhn et al., as modified by Atsugi, as applied to claim 1, and in further view of Ban et al. (U.S. 6,247,322).

Kuhn et al., as modified by Atsugi, set forth a device as described above, which is substantially analogous to the claimed invention. As is well known in the art, Atsugi teaches pressure conduits (26, 27) attached to the housing cover (21). Although not shown in Kuhn et al., such pressure conduits would be clearly present to connect the compressor to the refrigerant circuit. Using solenoid valves in pressure conduits was well known in the art at the time the invention was made to regulate fluid flow in and out of the compressor using electronic control. Ban et al., in Figure 3, teach a similar piston compressor where solenoid valves (183, 187) are placed in suction and discharge pressure conduits in a housing cover. Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the Kuhn et al., as modified by Atsugi, device by incorporating solenoid valves in the pressure conduits, as taught by Ban et al., in order to advantageously regulate fluid flow in and out of the compressor using electronic control.

With respect to the process of welding, in MPEP 2173, Product-by-Process Claims, the determination of patentability is based on the product itself (not the process). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product



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of the prior-art, the claim is unpatentable even though the prior-art product was made by a different process.

5. Claims 1, 3,4, 7, 9, 14, 15, 18-21, 23, 24, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsugi et al. as modified by Kuhn et al.

Atsugi et al. teaches a compressor with an intake (22) and a discharge chamber (25) for a suction pressure zone and a discharge pressure zone. The compressor comprises a housing (11, 19), a housing sealing cover (21), a drive shaft (15) including bearings (shown not enumerated), a drive mechanism (14) for reciprocating pistons (13) and converting the rotational movement of the drive shaft (15) into a reciprocating movement of the pistons (13), a cylinder block (cylinder assembly 12 including all cylinders) for aspirating and compressing a fluid through the reciprocating movement of the pistons (13), a valve device (inherently within valve plates 16, 17), and a cylinder head 20). The cylinder head (20) at least partially forms the intake (22) and discharge chambers (25). It is inherent that there is an intake (22) and discharge chamber (25) in the head (20). The cylinder head (20) is a separate element from the housing (11). The housing (11, 19) is of pot-shaped form (in that a pot has outer walls forming an inner chamber). The suction (22) and discharge (25) chambers on the left side of the compressor block (12) are located within a space defined by the housing (11) and the housing sealing cover (21).

The Atsugi device differs from the claimed invention in that there is no teaching of all of the intake and discharge chambers for the coolant being located on a same side of the cylinder block. The central concept of the Atsugi device is the compressor includes a lubrication system (21, 30, 31, 32, 35, 38) attached to the cylinder head (20). The lubrication system (21, 30, 31, 32, 35, 38) includes a housing cover (21), an oil reservoir (30), an oil intake (32), an oil outlet (35), and an oil separator (38). It was well known in the art at the time the invention was made that swashplate type compressors come in a single action piston configuration, and a dual action piston configuration as taught by Atsugi. Kuhn et al. in Figure 1, teach a single action piston arrangement for a swashplate compressor. A cylinder block (35) encloses single action pistons (27), and suction (39') and discharge (39) chambers are located on one side of the cylinder block (35). Where pulsed flow is not an issue, this type of compressor simple in design, and relatively less complex to manufacture compared to a dual action piston compressor as that taught by Atsugi, with its plural sets of suction and compressor chambers, valve assemblies, and manifold circuits. Furthermore, one of ordinary skill in the art would have appreciated that the lubricator system taught by Atsugi is applicable to a wide variety of piston compressors, such as the single action piston compressor of Kuhn et al. Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the Atsugi device by, incorporating a single action piston compressor, as taught by Kuhn et al, in order to advantageously use a compressor that is more simple in design, and relatively less complex to manufacture. In the combination, the Atsugi suction (22) and discharge (25) chambers are located on one

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side of the cylinder block (Atsugi 12). Furthermore it would have been obvious to adopt the single piece pot shaped housing (3) of Kuhn et al. in order to reduce parts from a cylinder section (Atsugi 11) and an end cap (19) to a single housing unit (Kuhn et al. 3) connected to motor drive wheel (Kuhn et al. 13).

The Atsugi housing (11, 19) is designed as a thin-walled tube (11) and the housing sealing cover (21) is a sheet metal pot (not necessarily one piece) having a wall thicker (see thicker portions) than the housing (11, 19).

An Atsugi bottom of the housing cover (21) is elastically deformable (metal is relatively deformable) so that in one area a contact force acts on the cylinder head (about 39) and clamps the cylinder head between the valve device (within 17) and the housing cover (21).

The Atsugi cylinder head has circumferential sealing webs (see walls defining suction and discharge chambers) pressed against the valve (17) device by a bottom of the housing cover (21). The examiner takes official notice that it was well known in the art to provide elastic seals at the junction of these walls and the valve device (17), thus constituting the housing cover bottom being elastic.

The Atsugi housing cover (21) walls that engage the valve plate (17) constitute mounting devices.

The Atsugi compressor is capable of being used as a motor vehicle air conditioner compressor, as taught in column 1 lines 5-40.

The Atsugi cylinder head (20) constitutes an insert between the valve plate (17) and the housing cover (21).

The Atsugi housing (11) is closed from the outside in an area of the cylinder block (cylinder assembly 12 including all cylinders) and the valve device (17). In this area, the housing is free of divisions, and sealing devices to the outside area.

The Atsugi compressor has a drive area (see motor section) and a high-pressure zone (discharge chambers), the compressor further comprising a seal (valve palates 16, 17 constitute seals) for the drive area. The housing sealing cover (21) and the seal of the drive area (17) being situated toward an environment (left) on a side of the compressor opposite the high pressure zone since there is a high pressure zone on the right side of the compressor.

The Atsugi housing (11) and housing sealing cover sealing devices (17) are situated on a side of the compressor opposite a greatest heat source, which in the application taught is the internal combustion engine of the vehicle. The valve plate (17) constitutes a flanged joint.

The Atsugi device further comprises a spacer (walls in 19) separating the intake pressure zone and the discharge pressure zone (suction and discharge chambers) within the housing bottom (19), the cylinder block (12 and plural cylinder assembly) and the valve device (16, or 17) being supported against the housing bottom by the wall spacer. The wall spacers are integrated into the housing bottom (19).

The Atsugi bottom (19) further comprises a second spacer (see plural walls) separating the discharge pressure zone (discharge pressure) and the drive area pressure zone (suction chamber) within the housing bottom (49).

The Atsugi compressor is capable of being used as a motor vehicle air conditioner compressor, as taught in column 1 lines 5-40. The valve device (16 or 17) is a valve plate with a suction and discharge valve.

6. Claims 2, 5, 6, 9-13, 16, 17, 22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsugi, as modified by Kuhn et al., as applied to claims 1, 4, 19, and 21, and in further view of Black (U.S. 4,065,229).

With respect to claims 5, 6, 9, and 10, Atsugi as modified by Kuhn et al., set forth a device as described above, which is substantially analogous to the claimed invention. The Atsugi device differs from the claimed invention in that there is no teaching of a sealing plate being pressed against the cylinder head using a threaded ring or being screwed to the housing. The head cover (21) constitutes a sealing plate. Black in Figure 1, teaches a compressor with a sealing plate or cover (15) that is screwed into the compressor housing using threads (11). Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to further modify the Atsugi, as modified by Kuhn et al., device by incorporating a threaded connection between the housing cover (Atsugi 21) and the housing (Atsugi 11), as taught by Black, in order to allow ease in compressor assembly without the need for further fastening components such as bolts. In the combination, the threads on the cover constitute internal threads in that they are internal to the housing (Atsugi 11). The sealing plate or cover (21) is pressed against the cylinder head (20) as seen in Atsugi Figure 1.

The examiner takes official notice that it was well known to make compressor housings, and cylinder heads, out of steel, and particularly, aluminum due to the materials lightness, durability, and high thermal conductivity.

The housing (Atsugi 11) is a thin tube and has threads (as in the combination above) and a stepped flange (about the junction of cover 21 and housing 11) that supports the cover (21) on the housing (11) when fully engaged, constituting a stress-reducing structure reducing stress on the threads.

With respect to forging or extrusion, in MPEP 2173, Product-by-Process Claims, the determination of patentability is based on the product itself (not the process). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior-art, the claim is unpatentable even though the prior-art product was made by a different process.

The examiner takes official notice that placing protruding tabs with eye holes for bolts or fasteners on compressor housings and covers was well known in the art of compressor mounting at the time the invention was made.

The examiner takes official notice that the use of gaskets was well known in the art to join compressor components, such as a housing cover and valve plate, or a shaft to the housing, in sealing arrangement.

The Atsugi shaft lead-through to the outside (outside of motor area), the shaft bearings (left side bearings), and shaft gaskets (as stated above) are situated in an area of the housing sealing cover (21).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Atsugi as modified by Kuhn et al., as applied to claim 1, and in further view of Ban et al. (U.S. 6,247,322).

Atsugi as modified by Kuhn et al., device set forth a device as described above, which is substantially analogous to the claimed invention. Atsugi, as modified by Kuhn et al., devices teach pressure conduits (26, 27) attached to the housing cover (21). Using solenoid valves in pressure conduits was well known in the art at the time the invention was made to regulate fluid flow in and out of the compressor using electronic control. Ban et al., in Figure 3, teach a similar piston compressor where solenoid valves (183, 187) are placed in suction and discharge pressure conduits in a housing cover. Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to further modify the Atsugi, as modified by Kuhn et al., device by incorporating solenoid valves in the pressure conduits, as taught by Ban et al., in order to regulate fluid flow in and out of the compressor using electronic control.

With respect to the process of welding, in MPEP 2173, Product-by-Process Claims, the determination of patentability is based on the product itself (not the process). The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior-art, the claim is unpatentable even though the prior-art product was made by a different process.

As stated above it would have been obvious to place seals at the junction between the housing (Atsugi 11) and the housing sealing cover (21) in order to prevent leaks. As seen in Figure 5 of Atsugi, suction port (27) leads to chamber (38), and seals between the housing (21) and the housing (11) around the chamber (38) would be exposed, or seals suction fluid, but would not be in communication with discharge fluid or the discharge chamber.

***Response to Amendment***

8. The objection to the title and the specification is hereby withdrawn in view of applicant's amendments.
9. The rejections of claims, 1-18, and 23, under 35 U.S.C. 112 2<sup>nd</sup> paragraph are hereby withdrawn in view of applicants amendments.

***Response to Arguments***

10. Applicant's arguments with respect to claim 1-31 have been considered but are moot in view of the new ground(s) of rejection.

The combination proposed above Kuhn et al. in view of Atsugi, as well as Atsugi in view of Kuhn et al. addresses all the limitations in the applicant's amendments.

The applicant has not challenged the examiner's official notice. The following official notice rejections are made final:



that it was well known to make compressor housings, and cylinder heads, out of steel, and particularly, aluminum due to the materials lightness, durability, and high thermal conductivity,

that was well known in the art of compressor mounting at the time the invention was made to place protruding tabs with eye holes for bolts or fasteners on compressor housings and covers,

and that the use of gaskets was well known in the art to join compressor components, such as a housing cover and valve plate, or a shaft to the housing, in sealing arrangement.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to piston compressors.

U.S. Pat. 5,127,314 to Swain – teaches a compressor demonstrating the state of the art.

U.S. Pat. 4,789,311 to Ikeda et al. – teach a compressor demonstrating the state of the art.

U.S. Pat. 4,544,332 to Shibuya - teaches a compressor demonstrating the state of the art.

U.S. Pat. 4,683,803 to Miller et al. - teach a compressor demonstrating the state of the art.

U.S. Pat. 3,312,169 to Schultz -teaches a compressor demonstrating the state of the art.

U.S. Pat. 3,712,759 to Olson Jr. teaches a compressor demonstrating the state of the art.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

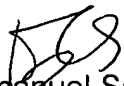
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

**Contact Information**


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Sayoc whose telephone number is (571) 272 4832. The examiner can normally be reached on M-F 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Emmanuel Sayoc  
Examiner  
Art Unit 3746

ECS

  
Timothy S. Thorpe  
Supervisory Patent Examiner  
Group 3700